Forest Insect Conditions On The Fishlake National Forest

1965

The following is an account of the most important forest insect problems encountered on the Fishlake National Forest this year. Part of this information was compiled from aerial survey data, and part was the result of limited ground examinations to supplement the aerial findings. In addition, a special evaluation survey was undertaken in most of the spruce budworm infestations to record defoliation and collect egg masses. Several attempts were made to complete the aerial survey as early as possible, but unfavorable flying weather caused several postponements until a later date.

The major forest pest problems this year were the spruce budworm, Douglas-fir beetle and aspen damage caused by both insects and disease. Briefly, spruce budworm spread into new areas of Douglas-fir, Engelmann spruce and subalpine fir but damage was light with no increase in activity expected next year. The Douglas-fir beetle continued its insidious killing of mature and overmature timber in most areas, but no threatening outbreaks were observed. Limited insect activity and widespread disease of aspen was common in all portions of the forest this year. A more detailed discussion of these problems follows.

Spruce budworm, Choristoneura fumiferana (Clem.)

Aerial surveys in 1964 picked up light spruce budworm infestations in South Creek, Birch Creek, along the south slope of Beaver River, in the south fork of North Creek and north of Elkhorn Guard Station. Total area of infestation then was estimated at 20,000 acres.

Aerial and ground surveys this year confirmed the infestations south of Beaver River and in the Elkhorn area. Infestations were spotted for the first time in Line Canyon, south fork of South Creek, Grindstone Flat, Levy Flat and north of Geyser Peak. Ground surveys reported scattered defoliation of subalpine fir in Big John's Flat. No defoliation was observed in Birch Creek or in the south fork of North Creek. The extent of defoliation as mapped from the air this year totaled 10,000 acres. Since all the defoliation was classed as light, there is little doubt that present budworm activity is more extensive than actually indicated. The main survey flight was not made until October 12, well after the optimum time for observing defoliation from the air. The heavy snowfall during early September undoubtedly removed most of the dead needles from the defoliated trees.

Spruce budworm feeding continued on Douglas-fir, Engelmann spruce and subalpine fir. Defoliation was observed from the ground in Elkhorn, south fork of Beaver River, Big John's Flat and Grindstone Flat. Overall defoliation by the budworm in all of these areas was classed as light.

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Relatively accurate and consistent predictions can be made as to next year's population level and resulting damage by sampling the egg population the year before. Egg mass samples were taken from Douglas-fir foliage in five areas on the Forest. The egg mass counts and defoliation forecast for 1966 are shown below:

Area	Number of New Egg Masses 1964	Number of New Egg Masses 1965	Percent Defoliation New Growth Actual 1965	Percent Defoliation New Growth Predicted 1965	Percent Defoliation New Growth Predicted 1966	Trend
Elkhorn	12.2	10.5	50-75	51-90	51-90	Static
Grindstone	-	1.5	25-50	-	15	Static
So. Fk. Beaver	-	0.6	50-75	-	15	Static
Gun Sight	-	3.5	-	-	12-15	Static
Big John's	-	2.6	-	-	15	Static

Elkhorn was the only area sampled in 1964. Defoliation estimates derived from egg mass samples collected in 1964 proved to be relatively accurate. Defoliation counts were made this year in Elkhorn, Grindstone Flat and Beaver River, but not elsewhere. These defoliation estimates, expressed in percentage, pertain only to current growth. This may appear misleading to some but is necessary in making meaningful population - damage correlations. Thus, it is possible that overall defoliation may not exceed 5 percent, even though 50 percent of the new growth has been removed.

The interpretation of current egg mass data forecasts light to moderate defoliation occurring in the Elkhorn area in 1966, and light defoliation elsewhere. Currently, no stands are threatened, nor is there any indication that they will be next year. Aerial and ground surveys will be intensified during 1966 at which time any significant changes in the anticipated course of the infestation will be noted.

Douglas-fir beetle, Dendroctonus pseudotsugae Hopk.

Aerial surveys show most of Douglas-fir beetle damage to be in the Monroe Mountain unit of the forest. Scattered concentrations of recent beetle activity were on north slopes of practically every drainage in the northern portion of the unit. Most of these areas are inaccessible and accumulated beetle damage has been confined to relatively small noncloggable isolated patches of Douglas-fir, making control efforts highly impractical. Elsewhere on the Forest isolated groups of 100 to 200 "red tops" were observed in the head of Splatter Canyon, on the south slope of Deer Creek,

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in Tidewell Creek, and on the east side of Deer Mountain. In other areas, slow insiduous killing of individual trees and small groups persist in stands contiguous to areas containing old beetle activity.

On an overall basis, old to new fading ratios approximated 1:1, indicating a static trend. Unless natural control factors reduce the population, this trend can be expected to continue through 1966.

Aspen leaf tier, Sciophila dunlex (Wlsh.) and the Large aspen tortrix, Choristoneura conflictana (Wlk.)

Aerial observance of damage to aspen by these two insects was masked by widespread infections of aspen leaves by a leaf spot, possibly, Marssonia populi (Lib.) Sacc. However, ground examinations made earlier in the year uncovered significant insect activity in some areas. Heavy defoliation on approximately 3,000 acres occurred in Sheep Valley and the area Mt. Defoliation ranged from 20 - 100 percent and averaged 70 percent. Larval parasitism was light and indications point to recurring heavy defoliation of aspen in both of these areas next year.

Significant parasitism of both larvae and pupae in 1964 helped to reduce leaf tier and aspen tortrix populations in Big John's Flat and Mi-Ihant Creek this year. Although the size of the infestation has remained unchanged defoliation was reduced to only ten percent this year. This downward trend is expected to continue in both of these areas next year.

The causal agent responsible for the defoliation, branch killing, and mortality of aspen in Frying Pan campground was not an insect, as initially suspected, but a combination of several pathogenic factors. The leaf browning and premature leaf drop was tentatively diagnosed as being caused by Marssonia populi, commonly referred to as "leaf spot". Hypoxylon canker, Hypoxylon sp. and Cytospora canker, Cytospora sp. are thought to be the disease responsible for branch and tree killing, but a positive determination has not yet been made. Damage to aspen by one or more of these pathogens has been widespread throughout most of the Region this year, with the most serious and extensive infections occurring in the southern half. Control of these pathogens under forest conditions is impractical.